Joint Modeling & Simulation Capability Working Group

JFCOM Capabilities Brief

Worldwide Joint Training and Scheduling Conference

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Purpose

- To provide a briefing on three Joint Training Environment capabilities being developed or in use by JFCOM that have applicability to joint training partners

Outline

- Joint Virtual Tactical Radio (JVTR)
- Alternate Joint Training & Experimentation Network (Alt JTEN)
- Support to Irregular Warfare

Joint Virtual Tactical Radio (JVTR)

- Joint Virtual Tactical Radio (JVTR) is a tactical radio emulator that can be used:
  - As a tool to train radio operators on proper use of tactical radios
  - As a mechanism to communicate (Asti)

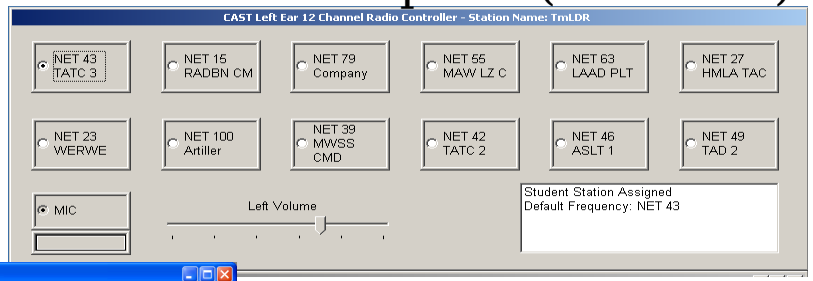
- JVTR is currently used by numerous organizations within the Army, Marine Corps and Navy

JVTR Features

- JFCOM developed radio & non-radio faceplates. Radio faceplates model closely simulates the user interface of an actual LS-564, PRC-117, 119C, & 148 radios.
- Supports channel presets, frequency offsets, self-test, adjustable transmitter power, plain text transmissions, simulated cipher text transmissions, simulated frequency hopping, Dim controls.
- Built on the proven MDV code
- Supports Intercom and Radio Emulation Modes
- Supports DIS (IEEE) and HLA (DMSO NG1.3v6)
- Can be integrated with the U.S. Marine CAST StudentStation and Master Control Stations (MCS) or the Global Master Control Stations (GMCS) standalone.
- Windows PC based (w/ mouse or touch screen technology
- Model interactive for line of sight

PRC-117&119 Faceplate

Non-Radio Faceplate (intercom)



- **May be used for unit to JTF (decision making)**

Navy Faceplate

MDV Faceplate

Benefits of Using JVTR

- Saves money
- Provides a realistic training mechanism
- Radio and Intercom Support
  - A version to fit all levels of simulated Radio Requirements
  - Touch screen “real” radio controls for faceplates that emulate radios
  - Provides non-radio faceplates for intercom like operations
  - Software is FREE- GOTS Developed
  - Standards Compliant (DIS, Native HLA, encoding)
  - Centralized Management of Exercise Radio Simulations
  - Can be co-resident with windows based models and simulations to reduce hardware
  - requirements (must have WINE installed for LINUX)
  - FULL function live radio interfacing
  - AAR Capability with audio recording and Key Word audio search
  - Simple installation and configuration-No model builder training required!
  - Will provide, as required, unit level training
  - Model interactive for weather, effects, line-of-sight comms (due in 09)
- Hardware:
  - Uses COTS hardware, low end to high depending on user desires
  - Minimally required single USB audio headsets
- Increase data available for AAR

Benefits and Payoffs For JVTR

- Crosses several JNTC research/focus are
  - Joint C4I & Communications Syste
  - Joint Training Data & Instrumenta
  - Joint Modeling & Simulation
- Enhances capability of JNTC architectur
- Increase data available for AAR

Estimated savings in relay radio hardware per sit

		Number of Bridged Circuits		
		20	30	40
Peak Period (hours)	2	30%	40%	48%
	3	30%	40%	48%
	4	25%	43%	53%
	5	25%	43%	53%
	6	25%	43%	53%

mple: 40 Radios X $25K each=$1M
VCS would save $530K (- JILVCS cost of $10
quipment cost, $100K in annual equipment
ntenance, and could reduce staffing 25 to 5

Alternate Joint Training & Experimentation Network (Alt JTEN)

- USPACOM and USEUCOM asked JFCOM to
  - Provide an extended connectivity option to JTEN for remote locations
  - Distribute live, virtual, and constructive training enablers from training/simulation centers to deployed exercise control group locations throughout the AOR in support of the Joint Exercise Program.
- USJFCOM has a requirement to deliver Joint enablers to small units in support of home station training
- Solutions must be:
  - Ruggedized and easily transported, set up and configured
  - Support satellite technology that is accessible world wide and supported by Commercial, Service, and DISA satellite hub sites
  - Provide a transport bandwidth sufficient to support JTEN collaborative communications and a Common Operational Picture (COP)
  - Must support Local Area Network (LAN) connectivity to expand backside system support, as required

Project Objectives

- Research and test available GOTS/COTS products that can provide a mobile communication infrastructure to extend JTEN to disparate locations world wide.
- Certify a means to support collective training in locations where fixed connectivity facilities may be inadequate or not available.
- Identify and establish standards and approved products.
- Publish findings to stakeholders that will enable them to task existing solutions providers, as required.

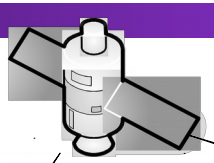
Proof of Principle

- PACOM agreed to host a proof of principle that will:
  - Provide Joint enablers to the 1-14 INF BN in support of home station training as they prepare for deployment
  - Validate the Alternate JTEN solution by demonstrating the ability provide Joint enablers by extending the Joint Training Environment to an austere location/home station to enhance small unit (platoon and below) training

Joint Tactical Tasks

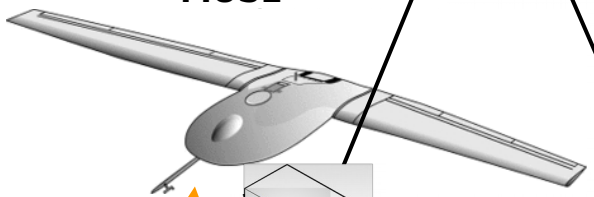
- This proof of concept event will train to the following Joint Tactical Tasks:
  - TA 3.2.1 Conduct Joint Fires
  - TA 3.2.1 Engage Time Sensitive Targets
  - TA 3.2.2 Conduct Close Air Support

Overview of Live ALT JTEN Field Test (OV-1)



JCSE
SATCOM FAC
Wahiawa, HI

Virtual UAV (25ID BCTC)
MUSE



JTEN

PTA Range, HI

2/25 BN TOC on PTA

Alt JTEN SATCOM Kit

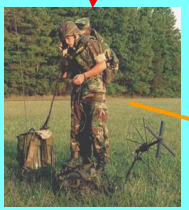
JTEN Node, BCTC HI

Virtual AC-130 Gunship
(Eglin, AFB) SOCCOM
VCFS

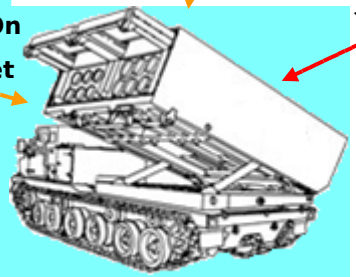
UAV Video

Virtual Rounds On Target

JTEN Node, Eglin AFB



Eyes On
Target



1-14 IN BN Squad level
ECAS Call For Fire

Joint Tactical Tasks
TA 3.2.1, Conduct Joint Fires
TA 3.2.1.1, Engage Time Sensitive Targets
TA 3.2.2, Conduct Close Air Support

Support to Irregular Warfare

- JFCOM is executing the Future Immersive Training Environment (FITE) Joint Capabilities Technical Demonstration (JCTD).

- The FITE JCTD will demonstrate capabilities to enable the conduct of more effective training in a fully immersive, realistic environment that sets the conditions for honing the complex (tactical, moral, legal and ethical) decision making skills needed for irregular warfare and close combat within existing and future training venues.

- The center piece of the FITE JCTD is focused on the cognitive domain

Support to Irregular Warfare

- One of the key technologies of the FITE JCTD is Virtual Battlespace 2, a commercial gaming product being used by the Army and Marine Corps to train small units

- In cooperation with JTCOIC, Training Development Group is providing technical support in the development of VBS-2 baseline scenarios; to include terrain data base, unique entity builds, pre-built behavior scripts
  - VBS2 scenarios
  - VBS2 terrain databases,
  - VBS2 characters and animations

FITE JCTD Scenario Planning

- IQ scenario location – As Samawah, Iraq
  - City of approx 250,000 people located on Euphrates River midway between Baghdad and Basrah.
  - Primarily Shi'a population.
- Scenarios for squad-level training audience include: Security patrol, establishing Combat Observation Point, responsd to VBIED and suicide bomber
- Scenarios require scripting behaviors in VBS2 to support squad-level training in observation and profiling examples of which are: Conversations, shopping, drinking tea, smoking, opening and closing shops

Way Ahead

- Continue VBS2 scenario development support to FITE JCTD.
- Participate in FITE Technical Demonstration at Camp Pendleton in Sep 09.
- Participate in FITE Operational Demonstrations at Fort Benning in Nov 09 and Camp Lejeune in Dec 09.
- Coordinate VBS2 development efforts with Services, JIWC, FITE JCTD, NPSUE, and allied partners
- Identify methods to improve VBS2 Artificial Intelligence to better represent human behavior.

So What

- VBS2 is being used for mission rehearsal and training in support of the C-IED misison
- VBS2, at the request of NATO, has been integrated with the Joint Theater Level Simulation system in support of multi-echelon training
- Virtual desk top simulators/commercial gaming offers a unique method of delivering an immersive environment for staff training